

## Master Syllabus

### CAM 2225 - Tool Design

**Division:** Science, Mathematics and Engineering

**Department:** Computer Aided Manufacturing

**Credit Hour Total:** 3.0

**Lecture Hrs:** 2.0 **Lab Hrs:** 2.0

**Prerequisite(s):** CAM 2114

**Date Revised:** October 2013

---

### Course Description:

Design theory, principles and drawing techniques for the tool design industry. Two classroom, two lab hours per week.

### General Education Outcomes:

- ▣ Critical Thinking/Problem Solving Competency
- ▣ Written Communication Competency

### Course Outcomes:

#### Drafting and Design Techniques

Recognize and apply the drafting and design techniques used in tool drawings.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% of students score of 80% or better

**Assessment Method:** Portfolios

**Performance Criteria:** Development of drawings graded with a rubric. 70% of students graded at "70" or better

#### Toolmaking Practices

Demonstrate ability to examine and identify tool making practices related to the design of stamping dies.

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70 % of students score of 80% or better

#### Tool Design Principles and Techniques

Demonstrate proficiency in tool design principles and techniques by reviewing or designing parts.

**Assessment Method:** Behavioral observations

**Performance Criteria:** Students graded on print reviews and parts designs using a rubric. 70% of students achieve at least a "70" on the rubric

**Assessment Method:** Locally developed exams

**Performance Criteria:** 70% of students score 80% or higher on exams

### Outline:

Principles of tool design  
Drafting and design techniques used in tool drawings  
Tool making practices  
Heat treatment used in the tool design industry  
Sheet-metal blanking and piercing dies  
Sheet-metal bending, forming and drawing dies  
Problem solving for tooling design  
3D solid modeling details and assembling